

AAS 198th Meeting, June 2001*Session 59. Galactic ISM**Display, Wednesday, June 6, 2001, 10:00am-7:00pm, Exhibit Hall*[\[Previous\]](#) | [\[Session 59\]](#) | [\[Next\]](#)

[59.18] Ground-based Terahertz CO Spectroscopy Towards Orion

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Using a superconductive hot-electron bolometer heterodyne receiver on the 10-m Heinrich Hertz Telescope on Mount Graham, Arizona, we have obtained velocity-resolved 1.037 THz CO(J=9-8) spectra toward several positions along the Orion Molecular Cloud ridge. We confirm the general results of prior observations of high-J CO lines that showed that the high temperature, ~130 K, high density molecular gas, $n \sim 10^6 \text{ cm}^{-3}$, is quite extended, found along a 4' region centered on BN/KL. With an angular resolution of 9" we are able to spatially and kinematically discriminate the very strong, broad line emission from the emission originating in the more quiescent regions. Our experiment convincingly demonstrates the feasibility of conducting observations from a ground-based site at THz frequencies, especially in the context of heterodyne-mode observing.

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